

5.0 Conclusions

There is a substantial amount of data available to this effort. While some parameters will require additional monitoring in order to complete the TMDL process, this robust database has made an initial assessment of system needs and designated use requirements possible

- The assessment of water quality conditions within the SR-HC TMDL reach identified substantial water quality concerns centered on excessive nutrient loading in the Upstream Snake River and Brownlee Reservoir segments and low dissolved oxygen in the Brownlee Reservoir segment.
- Total dissolved gas was identified as a pollutant of concern by SR-HC PAT members and load allocations meeting the required standard were assigned to the Brownlee and Hells Canyon Dams.
- Mercury concentrations were observed to be in excess of the SR-HC TMDL fish tissue targets in over 85% of the data and fish tissue consumption advisories remain in place, but no final TMDL could be prepared due to a lack of water column data. This TMDL has been postponed to 2006. Data will be collected during the intervening time period and a full assessment completed by 2006.
- Similarly, the influence of sediment, listed as a pollutant in the Upstream Snake River, Brownlee and Oxbow Reservoir segments, on aquatic life uses could not be fully assessed due to lack of duration data, but was identified as a transport mechanism for mercury, pesticides and nutrients within the system and has been targeted as an indicator for tracking pollutant loading while duration data is being collected.
- While little data was available for pesticides within the SR-HC TMDL reach, and no data was available for the listed segment (Oxbow Reservoir), the initial assessment that pesticide transport within the system should be minimized was possible. Implementation of concurrent pollutant reductions for sediment and total phosphorus should result in reductions in pesticide transport within the SR-HC TMDL reach. Data collection will allow designated use status identifications to be made during the first phase of implementation.
- Atmospheric influences were identified as a primary source of temperature exceedences and an in-depth evaluation of cold water refugia in the reservoirs demonstrated the critical nature of such habitat to the arid Snake River system.
- Bacteria and pH listings were not found to be supported by the data and have been recommended for delisting.

As demonstrated by the size and diversity of the issues addressed in this document, the SR-HC TMDL reach is a highly complex system and will no doubt yield unexpected results as implementation and further data collection proceeds. The challenges encountered in determining designated beneficial use support and system impairment are an outgrowth of this complexity and will require additional assessment and re-visitation as understanding of the system evolves. Additionally, due to the complexity encountered and the enormous geographic scope of this

effort, an extended time period for implementation and system response will be required. Generally, TMDL processes are expected to be completed within ten to 15 years of approval, this system, with its sequential tributary TMDL processes, wide diversity of land use and staggering size will not doubt require several decades to respond completely to implementation projects and changes in management.

Because of the complex nature and the extended time frame required, it is absolutely critical that the SR-HC TMDL remain a truly iterative process whereby improved understanding of the system can be re-applied to the initial targets and goals as time passes, and that these targets and goals can be updated to better reflect system needs and appropriate management.